

**CONSTRUCTION AND OPERATION OF A PIGGERY & ABATTOIR FOR THE  
EVARISTUS SHIKONGO CORRECTIONAL FACILITY IN THE TSUMEB DISTRICT OF  
THE OSHIKOTO REGION**



**DRAFT ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

**ECC APPLICATION NO.: 003411**



**PROPONENT: NAMIBIAN CORRECTIONAL SERVICE**

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# 1. INTRODUCTION

## 1.1. Project Background and Location

The Namibian Correctional Service (NCS) or the project Proponent intends to construct and operate a Piggery & an Abattoir and associated infrastructures for the Evaristus Shikongo Correctional Facility (ESCF) about 25km northeast of Tsumeb along the M75/B15 road to Tsintsabis in the Oshikoto Region - **Figure 1** and **Figure 2**.

The two facilities will be established adjacent to the existing ESCF premises (Farm), formerly known as Farm Scott, which is owned by the NCS and therefore the project site falls under NCS land ownership. The Piggery and Abattoir facility with associated infrastructures will cover a surface area of 11-hectares, whereas the abattoir will cover 2 hectares. These two new facilities will use the existing borehole water and a new Waste and Effluent Treatment facility (small wastewater dams) is envisaged to be designed for the following slaughter phases, namely Phase 1: 700 pigs per month, Phase 2: 35 cattle per month, and Phase 3: 50 goats/sheep per month.

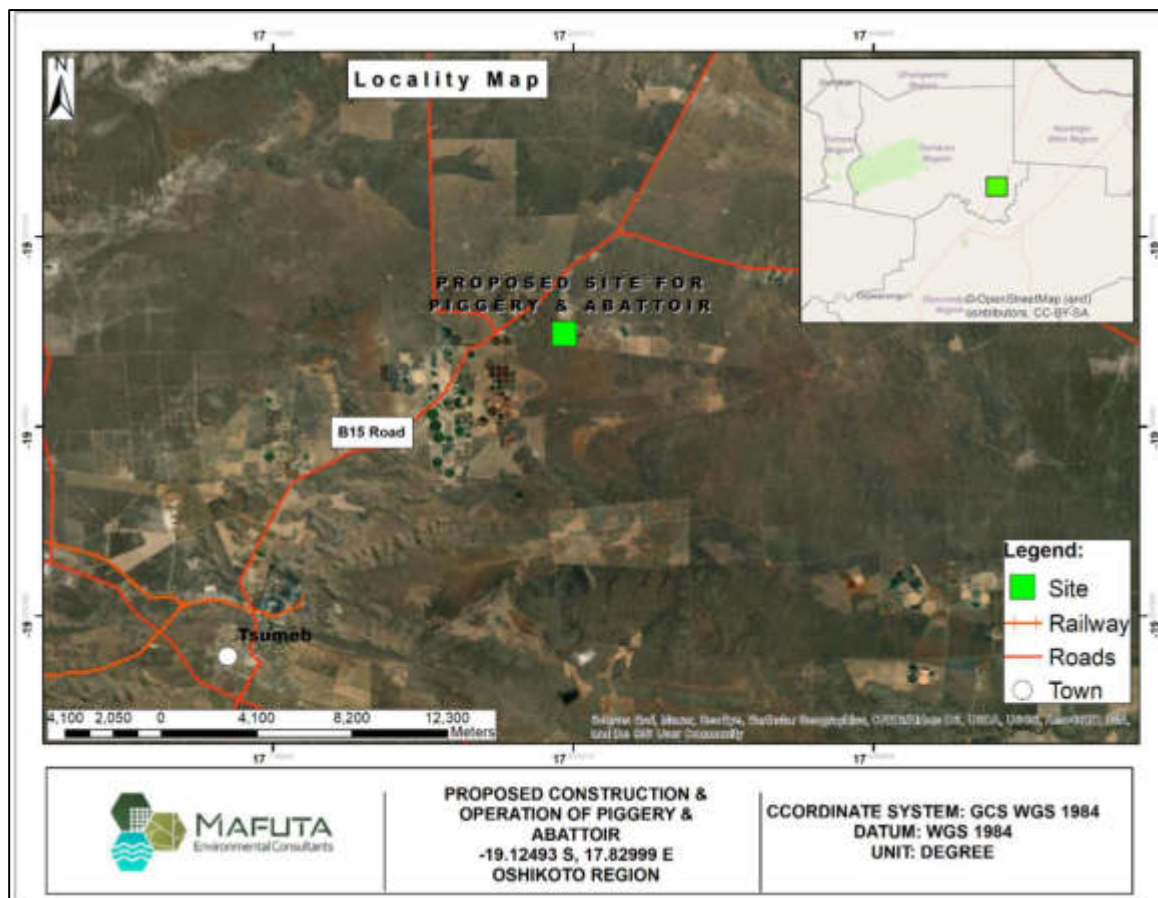


Figure 1: Proposed Piggery and Abattoir Locality at the ESCF near Tsumeb, Oshikoto Region

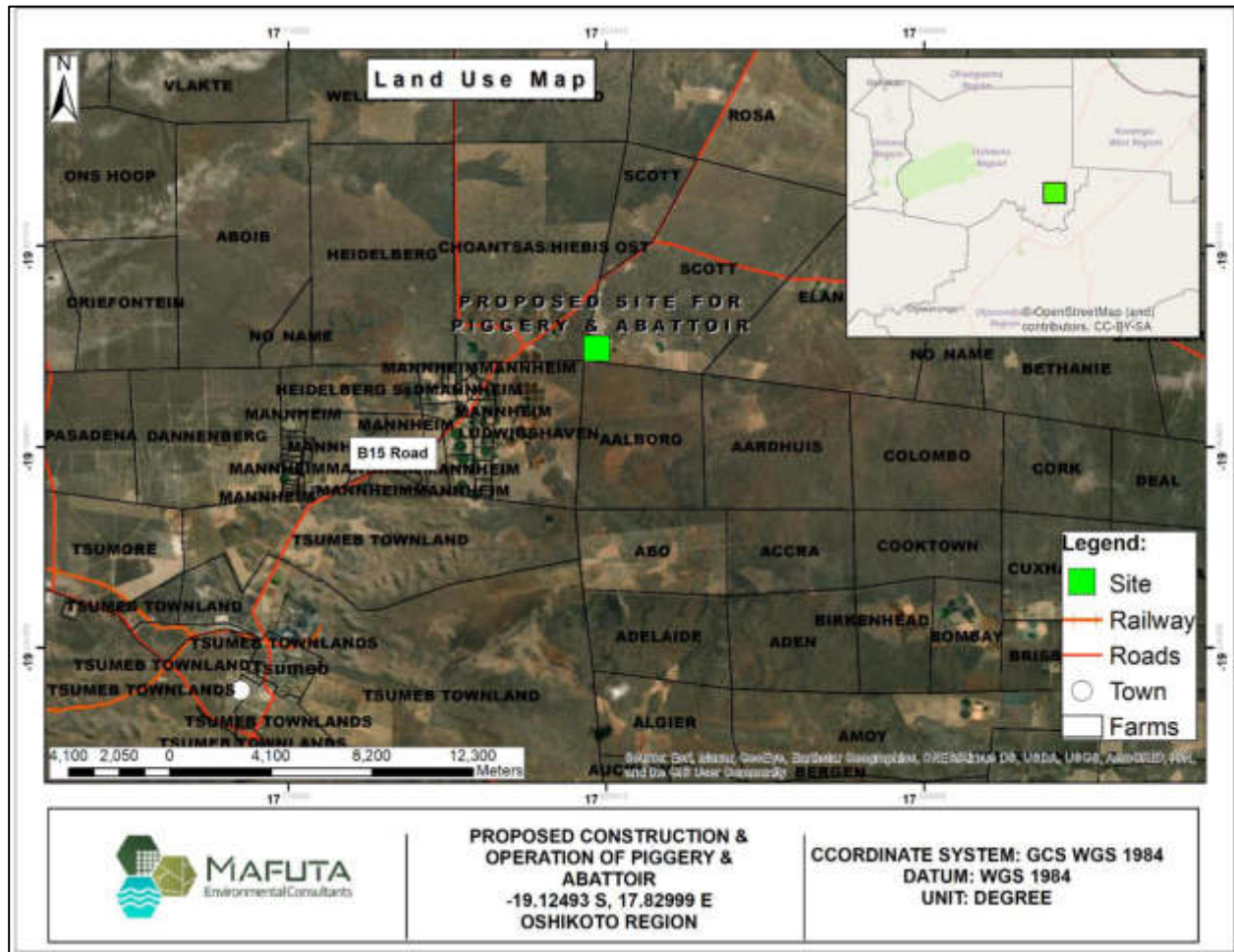


Figure 2: Surrounding properties (land uses) at the proposed project site near Tsumeb

The proposed project site is located about 1km from the existing administration building of the ESCF facility. The approximate site coordinates are presented in Table 1.

Table 1: Approximate site boundary coordinates

Site Point	Latitude	Longitude
Point A	19° 7'40.28"S	17°50'2.61"E
Point B	19° 7'42.34"S	17°49'50.89"E
Point C	19° 7'23.98"S	17°49'54.69"E
Point D	19° 7'25.89"S	17°49'46.45"E

## 1.2. Brief Project Description

The proposed project activities will entail three phases, namely the planning & design, construction, operational & maintenance. These are briefly explained below (further reading in Chapter 2 of the ESA Report).

### A. Planning and Design Phase

As part of the planning phase which also accommodates an Environmental Impact Assessment ESA/(EIA) study, a preliminary site layout has been drawn by the contracted project architects (Agostinho Ferreira Architects) and the construction cost is also determined during the feasibility study by the planning and design engineers.

The preliminary site layout (drawings) for the proposed facilities drawn by Agostinho Ferreira Architects (AFA) is shown in **Figure 3** below.

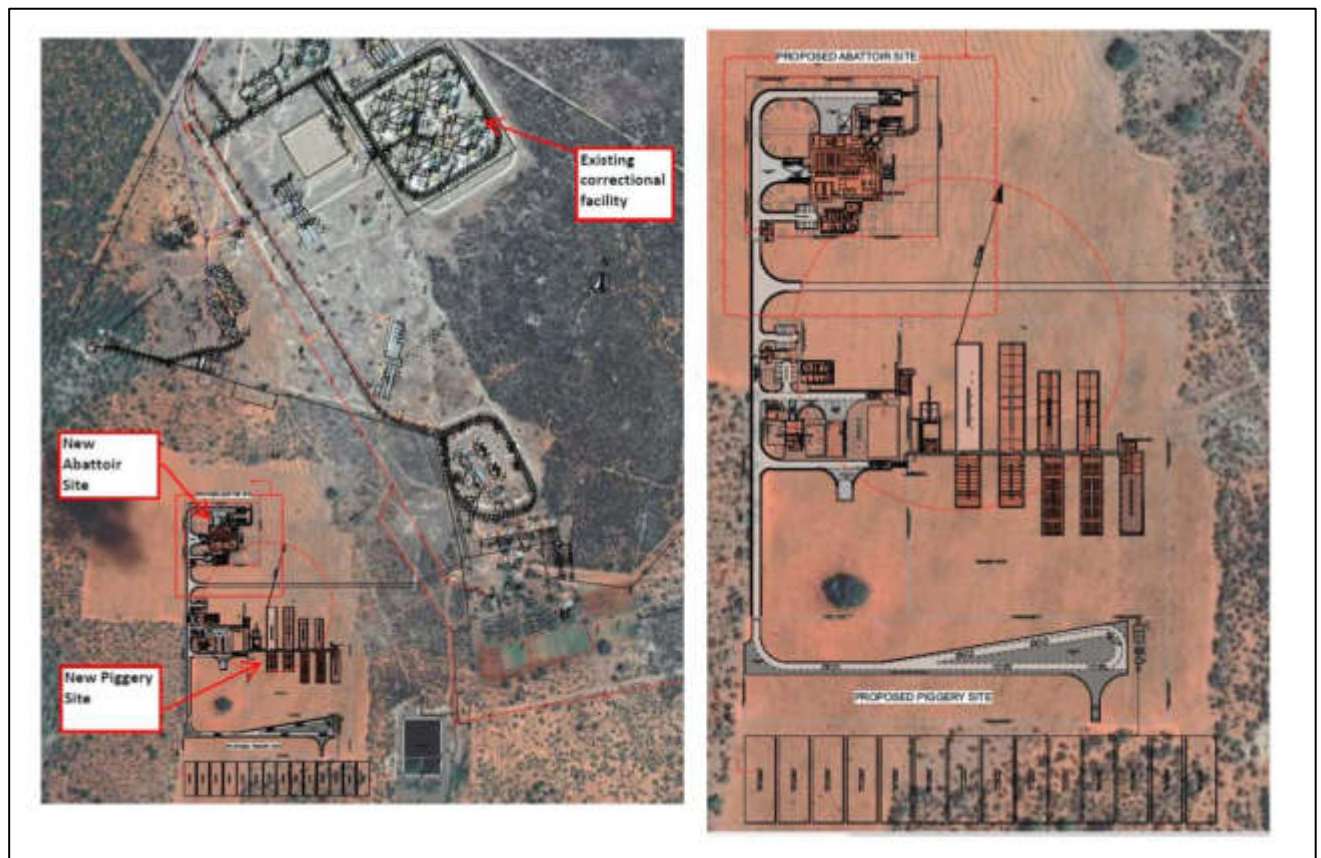


Figure 3: Preliminary drawings (layout) of the piggery and abattoir at the ESCF (AFA, 2021)

### B. Construction Phase

The proposed project will involve the construction of the piggery and abattoir and their associated infrastructure. Construction works will be outsourced to an appointed and experienced construction

contractor(s). The facilities and anticipated related infrastructure will cover the footprint of 11-hectares for the piggery and 2 hectares for the abattoir.

During construction phase, earth works will be carried out in certain areas of the project site to erect the buildings and for the installation of the necessary services infrastructure. This will require soil excavation within the construction sites. There will be heavy construction vehicles and equipment moving around the site.

Once the technical and administrative documentations of the planning and design phase are approved, construction activities will follow as planned by the project Proponent and their construction engineers/contractors.

### **C. Operational and Maintenance**

The Piggery and Abattoir will be operated and managed by a responsible unit within NCS. The maintenance of the facilities will be done by NCS maintenance team. It is during this phase when the pigs will be kept on site under the care of designated workers and the monthly processing of 700 pigs (phase 1), 35 cattle (phase 2) and 50 goats/sheep (phase 3). The food for pigs will be obtained from local suppliers in Tsumeb with some of the feed produced by NCS. The re-location of the piggery from Oluno Correctional Facility will be the source of pig supply to the Piggery. In-house pig bleeding will be the source of pigs to sustain the Piggery.

Upon a determined time, frequency and possibly depending on the demand, some pigs will be slaughtered and processed in the abattoir, whereby it will be distributed to other NCS facilities throughout the country as well as to some of the Namibian Police holding cells, as a source of meat supply for the inmates / offenders.

It is anticipated that the facilities' will be operated daily, except for animal slaughtering that is likely to be done at a determined frequency and as required.

### **1.3. Appointed Independent Environmental Consultant**

Subsequently and to comply with the EMA and its 2012 EIA Regulations, the Proponent appointed Mafuta Environmental Consultants CC (MEC), independent Environmental Consultants as the Environmental Assessment Practitioner to undertake the required Environmental Scoping Assessment (ESA) Study. The ESA process includes all the required tasks for the application of the project ECC. As required by the Ministry of Environment, Forestry and Tourism (MEFT), an application for a project ECC needs to be compiled and submitted to the Competent Authority

(Ministry of Agriculture, Water and Land Reform (MAWLR) and uploaded onto the MEFT ECC Portal / system for project registration purposes.

The project ECC will then be issued upon approval of this document, i.e., Draft Environmental Management Plan (EMP) and the associated ESA Report.

The Draft EMP was compiled by Ms. Fredrika Shagama, a qualified and experienced hydrogeologist and Environmental Assessment Practitioner (EAP) with over 6 years of experience in environmental management consulting.

#### **1.4. Environmental Legal Obligations: Permitting (Licensing) and Authorizations**

The content of the EMP must meet the requirements of Section 8 (j) of the EIA Regulations. The EMP must address the potential environmental impacts of the two facilities’ operations on the environment throughout the project life cycle. It must also include a system for assessment of the effectiveness of monitoring and management arrangements after project implementation.

The Proponent, therefore, has the responsibility to ensure that the proposed project activities as well as the EA process conform to the principles of the EMA and must ensure that employees act in accordance with such principles. **Table 2** below lists the requirements of an EMP as stipulated by Section 8 (e) of the EIA Regulations, primarily on specific approvals and permits that may be required for the proposed project activities.

**Table 2: Legal permitting and authorizations pertaining to the proposed project activities**

<b>Legislation/Policy/ Guideline</b>	<b>Relevant Provisions</b>	<b>Implications for this project</b>
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27).  Details principles which are to guide all EAs.	The EMA and its regulations should inform and guide this EA process.  Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue.  Contact details at the Department of
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21).	Environmental Affairs and Forestry (DEAF), <b>Ministry of Environment, Forestry and Tourism (MEFT), Office of the Environmental Commissioner</b>



Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	<b>Mr. Timoteus Mufeti</b> Tel: +264 61 284 2701
The Water Act 54 of 1956  The Water Resources Management Act No. 11 of 2013 (unpromulgated)	<b>If there is a Groundwater Abstraction and Use, the permit should be amended to include the Piggery &amp; Abattoir operations. Should the Proponent decide to dispose of wastewater onsite, they should apply for Wastewater/effluent Permit from the). The permit should be renewed as required.</b>	<b>Mr Franciskus Witbooi (Deputy Director: Water Policy and Water Law Administration.</b> <b>Tel: (061) 208 7158 OR</b> <b>Contact: Ms. Elise Mbandeka</b> <b>Tel: +264 61 208 7167</b>  Directorate of Water Resources Management, Water Environment Division of the Department of Water Affairs (DWA):
Animal Health Act No. 1 of 2011	The Proponent should ensure that the facility and its operations adhere to the requirements of this Act.	Agricultural Extension Department of the MAWLR
Fertilizers Farm Feeds and Agricultural Remedies Act No. 36 of 1947	The Proponent should ensure compliance with the Regulations of this Act. If required, the necessary permits should be obtained from the relevant Directorate of the Ministry of Agriculture, Water and Land Reform.	
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that “No person shall possess or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area”	The Proponent should obtain the necessary authorisation form the MME for the storage of fuel on-site.  <b>Mr. Carlo Mcleod</b> (Ministry of Mines and Energy: Acting Director – Petroleum Affairs)  Tel: +264 61 284 8291

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Forestry Act 12 of 2001, Amended Act 13 of 2005	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22 (1)). The Act prohibits the removal of and transport of various protected plant species.	Should there be protected plant species, which are known to occur within the project site, these are required to be removed and a permit should be obtained from the nearest Forestry office (Ministry of Environment, Forestry and Tourism (MEFT)) prior to removing them.  <b>Mr. Fillemon Kayofa (Acting Director of Forestry Division)</b>  Tel: +264 61 208 7320
Road Traffic and Transport Act, No. 22 of 1999	Mitigation measures should be provided for if the roads and traffic impact cannot be avoided.  Should the Proponent wish to undertake activities involving road transportation or formalize access onto existing roads, the relevant permits will be required from the Ministry of Works and Transport	<b>Mr Eugene de Paauw (Roads Authority – Specialist Road Legislation)</b>  <b>Tel.: (061) 284 7027</b>
National Heritage Act No. 76 of 1969	Call for the protection and conservation of heritage resources and artefacts.	Should any archaeological material, such as bones, old weapons/equipment etc be found on the project site, work should stop immediately, and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material.  Contact Details at National Heritage Council of Namibia  <b>Mr Manfred Gaeb (Regional Heritage Officer) OR</b>

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
		<p><b>Ms. Agnes Shiningayamwe (Regional Heritage Officer)</b></p> <p><b>Tel: (06) 301 903</b></p>

## **2. EMP ROLES AND RESPONSIBILITIES**

NCS (the Proponent) is ultimately responsible for the implementation of the EMP. However, the Proponent may delegate this responsibility at any time, as they deem necessary during the project phases. The roles and responsibilities of all delegates/parties involved in the effective implementation of this EMP are set out below:

### **2.1. Monitoring Authority: Department of Environmental Affairs and Forestry**

The Department of Environmental Affairs and Forestry (DEAF) is responsible for enforcing compliance with the EMA, its regulations and full implementation of this EMP. The competent authority also reviews biannual reports and grant ECC renewal after 3 years.

### **2.2. The Competent Representative from Veterinary Division of MAWLR**

As deemed necessary, there would be a site or an animal inspection by an official from MAWLR’s Veterinary Division to monitor the enforcement of compliance with the Agricultural Regulations and full implementation of relevant components of this EMP.

### **2.3. The Proponent or Proponent’s Representative (PR)**

If the Proponent does not personally manage all aspects and phases’ activities referred to in this EMP, they should assign this responsibility to a suitably qualified individual referred to in this plan as the Proponent’s Representative (PR). The PR may be appointed to manage all phases of the project, or to manage only the EMP aspects for the project. The PR’s responsibilities may include:

- Managing the implementation of this EMP and updating and maintaining it when necessary.
- Management and monitoring of individuals and/ or equipment on-site in terms of compliance with this EMP.
- Issuing fines for contravening EMP provisions.

### **2.4. Project (Farm) Manager (as appropriate)**

This individual will be responsible to ensure that the operations of the project are completed on time. The Manager's duties and responsibilities will include:

- Ensure that relevant commitments contained in the EMP Action Plans are adhered to.
- Ensure relevant staff is trained in procedures entailed in their duties.
- Maintain records of all relevant environmental documentation for the project.
- Reviewing the EMP annually and amending the document when necessary.
- Issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site.
- Cooperate with all relevant interested and affected parties/stakeholders.
- Development and management of schedules for daily activities.

## **2.5. Environmental Control Officer (ECO)**

The Proponent may assign the responsibility of ensuring EMP compliance throughout the project life cycle to a designated member of staff or external qualified and experienced person, referred to in this EMP as the Environmental Control Officer (ECO). The ECO will have the following responsibilities:

- Management and facilitation of communication between the Proponent, PR and Interested and Affected Parties (I&APs) regarding this EMP.
- Conducting site inspections (recommended frequency is monthly or weekly as recommended – please refer to Table 3) of all areas with respect to the implementation of this EMP (monitor and audit the implementation of the EMP).
- Advising the PR on the removal of person(s) and/or equipment not complying with the provisions of this EMP.
- Making recommendations to the PR with respect to the issuing of fines for contraventions of the EMP.
- Undertaking an annual review of the EMP and recommending additions and/or changes to this document.
- Ensuring that the project activities on site are conducted in accordance with the International System organization (ISO) standard 14001: 2015.

## **2.6. Technical Staff and Consultants**

The project's technical experts and consultants will be responsible to:

- Safely and effectively monitor or advise on the implementation of various technical parameters related to:
  - Technical and mechanical matters
  - Soil preservation/ protection
  - ground stability (geotechnical investigation prior to construction)
  - employee/ contractor health
  - water resources management
  - waste management (solid and wastewater), and
  - mechanical designs of various equipment on site

## **2.7. Archaeology: Chance Finds Procedure (CFP) Implementation Roles**

The following personnel have been assigned responsibilities as per the Chance Finds procedure (Appendix 1):

- Operator: To exercise due caution if archaeology remains are found.
- Foreman: To secure site and advise management timeously.
- Superintendent: To determine safe working boundary and request inspection.
- Archaeologist: To inspect, identify, advise management, and recover remains.

The Proponent should assess these commitments in detail and should acknowledge their obligation to the specific management actions detailed in the Table under the following section.

## **3. ENVIRONMENTAL MANAGEMENT & MITIGATION MEASURES**

In this chapter, the identified potential negative impacts anticipated from the proposed establishment and operation of the Piggery and Abattoir are listed and management and mitigation measures in the form action plans are provided thereto.

### **3.1. Management of Key Potential Adverse Environmental Impacts**

From the scoping assessment conducted for the proposed project, the following key potential negative impacts have been identified and are summarized below.

- **Physical disturbance to site soils/land during construction and pollution.**

- **Odour:** Piggeries are associated with odour that comes from pig manure, decaying feed, and carcasses.
- **Impact on groundwater resources (pollution and over-abstraction)**
- **Air quality issues:**
- **Noise** generated by the Piggery itself (pigs) and construction works.
- **Impact on fauna and flora (biodiversity)**
- **Health and safety risks**
- **Environmental pollution (solid and wastewater generation)**
- **Vehicular Traffic safety**
- **Impact on archaeological and heritage resources** from inadvertent destruction of subsurface sites and or objects during earthworks for construction phase.

### **3.2. Aim of the Environmental Management and Mitigation Action Plans**

The aim of management and mitigation action plans (measures) of the EMP is to avoid the above-listed potential negative impacts, where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts. These will be done by implementing the measures contained in **Table 3**.

The responsible person(s) should assess these actions in detail and acknowledge their commitment to the specific management actions detailed in the phases given under the following subsections.

**Table 3: Management and Mitigation Action Plans : Planning & Design, Construction, and Operational phases**

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
<b>PLANNING AND DESIGN PHASE</b>						
EMP implementation and training	Lack of EMP awareness and implications thereof	<p>-A Comprehensive Health and Safety Plan for the project activities should be compiled.</p> <p>-NCS need to appoint a Proponent’s Representative (PR) that will act as their on-site implementing agent. This person should be responsible to ensure that the Proponent’s responsibilities are executed in compliance with relevant legislation and this EMP</p> <p>-An Environmental Control Officer (ECO) should be appointed</p>	<p>-All required Plans and systems are compiled and in place.</p> <p>and ECO is appointed</p>	Proponent	EMP implementation Plans and Systems	Pre-construction
Water resources	Groundwater pollution	<p>-Stormwater management plans (discharge points) should be properly designed and incorporated into the site layout to prevent the potentially contaminated run-off from reaching groundwater resources.</p> <p>-The wastewater dams design should include liners to prevent wastewater</p>	-Updated and inclusive designs/layout	Planning Engineers(s)	Technical Staff/Consultant (Planning Engineers)	Pre-construction

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		infiltration into the ground and groundwater.				
Labour recruitment (construction)	Recruitment of out-of-area for casual/general labour	-Priority for unskilled and semi-skilled labour for construction works should be given to locals if they have the skills to undertake the work.	-Record of all casual labourers -Locals hire by the construction contractor	Proponent  Construction Contractor / Engineer	None	Pre-construction
<b>CONSTRUCTION AND OPERATIONAL &amp; MAINTENANCE PHASE</b>						
EMP implementation and training	Lack of EMP awareness and implications thereof	-EMP trainings should be provided to all new workers on site. -All site personnel should be aware of necessary health, safety, and environmental considerations applicable to their respective work. -The site should be inspected, and a compliance audit done throughout <u>the project activities, monthly.</u> An EMP non-compliance penalty system should be implemented on site.	Compliance monitoring conducted bi-annually and should be recorded.	ECO	Bi-annual reports  Records of EMP training conducted.	Throughout project phases and as required



Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
Water Resources Use	Over-abstraction (water demand and availability)	<p>-If an additional borehole is considered, it should be sited, and their sustainable yields determined during the aquifer test (pumping test) by a qualified and experienced hydrogeologist who will then recommend a safe abstraction yield for the project site. This is to ensure that the local aquifers are not stressed, i.e., negatively impacted due to over abstraction.</p> <p>-If there is an existing Groundwater Water Abstraction &amp; Use Permit, this should be revised to include the water volumes proposed for the Piggery and Abattoir project. This should be done by applying for amendment to the national Department of Water Affairs (DWA) at the Ministry of Agriculture, Water and Land Reform (MAWLR). The aim is to regulate and manage water abstracted from the borehole(s). In the Permit, the Water Regulatory Authority would set objectives (abstraction targets), conditions, annual abstraction threshold,</p>	-Proof/ recording/ quantification of water saving efforts.	Proponent  Project Manager  ECO	Water storage tanks on site	Throughout the project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>monitoring requirements and enforce compliance by the Proponent. If there is no Permit, this should be applied for, given that the proposed project is an agricultural related activity that is known to be water consuming.</p> <p>-Water storage tanks should be inspected daily to ensure that there is no leakage, resulting in wasted water on site.</p> <p>-The water resources impact awareness training should be provided to the employees involved in all the project phases (construction and operational).</p> <p>-Monthly groundwater monitoring to record water levels in both the NCS production boreholes and drilled monitoring boreholes within 1km north of the project and monitoring boreholes of neighbouring boreholes in farms (to the north and south) and any other borehole water user within a 5 km radius of the project site.</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-Water should be used sparingly, by ensuring water re-use, and recycling for different suitable activities of the project.</p> <p>-The borehole(s) should only be pumped for a specified period in a week and water stored in water storage tanks or reservoirs. This will allow the boreholes(s) to recover from previous day pumping (abstraction).</p>				
	Groundwater Pollution	<p>-All run off materials such as hydrocarbons, wastewater and other potential contaminants should be contained on site and disposed of in accordance with municipal wastewater discharge standards, so that they do not reach to water systems.</p> <p>-The new wastewater management ponds (dams) associated with the Piggery and Abattoir should be properly lined with geomembrane lining to prevent seepage through the dams to groundwater systems.</p>	<p>-Wastewater dams are lined</p> <p>-Groundwater quality monitoring boreholes are drilled north of the facilities and samples collected for analysis</p> <p>-Adequate toilet and basic ablution facilities on site.</p>	Proponent  ECO	<p>Wastewater containment dams</p> <p>Wastewater pumping system</p> <p>Hazardous waste containers</p> <p>Chemical toilets</p> <p>Sewage removal operator</p>	Throughout the project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-At least two monitoring boreholes should be drilled and installed within 1km upstream (south) and downstream (north) of the facilities. These boreholes will be used to detect and monitor possible pollution from the site operations.</p> <p>-Wastewater and hazardous used substance such as oils and grease should be properly disposed of in the appropriate management pipelines and waste containers, respectively and disposed of in the designated wastewater containment dams onsite and at the hazardous disposal facilities in Tsumeb, respectively.</p> <p>-Sewage waste should be stored as per the available sewage system (long drop toilets or utilized system) supplied on site and regularly disposed of at the nearest treatment facility.</p>			waste treatment agents/chemicals	
Soils	Physical disturbance	-Site areas that have been excavated but not used for construction activities should be rehabilitated to	<p>No proliferation of informal vehicle tracks.</p> <p>No new erosion gullies.</p>	<p>Proponent</p> <p>Construction Contractor</p>	<p>Proponent</p> <p>Backfilling and levelling excavator</p>	Throughout the project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>their pre-excavation state to avoid erosion.</p> <p>-Soils around the site should not be disturbed.</p>		ECO		
	Soil pollution	<p>-Where hydrocarbons and other chemicals are used during the project activities on site, impermeable liners should be laid on such sites to capture possible spills and prevent these substances from reaching the site soils.</p> <p>-In an event that any of the substances mentioned above, spill on the soil, the contaminated soil should be cleaned up immediately and dispose of in a designated hazardous waste bin and transported to the nearest approved landfill site. The contaminated and removed soil should be replaced with clean soil.</p> <p>-No waste, of any form should be disposed of on the soils but in designated waste containers.</p> <p>-Spill control preventive measures should be in place on site to management soil contamination,</p>	<p>No complaints of pollutants on the soils and eventually in the water due to project activities</p> <p>No visible oil spills on the ground or pollution spots.</p>	<p>Proponent</p> <p>ECO</p>	<p>Complaint's logbook</p> <p>Waste containers</p> <p>Non-permeable material to cover the ground surface at areas where hydrocarbons and potential pollutants are utilized.</p>	Throughout the project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>thus preventing and or minimizing the contamination from reaching water resources bodies.</p> <p>-All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures.</p> <p>-The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill.</p> <p>-Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site.</p> <p>-Polluted soil must be collected and transported away from the site to an approved and appropriate hazardous waste treatment facility in Tsumeb.</p> <p>-Washing of equipment contaminated hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants</p>				

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		are prevented from contaminating soils.				
Biodiversity	Loss of Fauna and Flora	<p>-Vegetation found on the site, but not on the site infrastructure footprint should not be removed nor disturbed in any way, and thus, should be left to preserve biodiversity on the sites.</p> <p>-Workers should refrain from killing or snaring livestock found on site.</p> <p>-Illegal hunting (poaching) of wildlife in the area is strictly prohibited.</p> <p>-Environmental awareness on the importance of biodiversity preservation should be provided to the workers.</p> <p>-Access roads (even existing ones) should be utilized appropriately in a manner that disturbs minimal land areas as possible, thus minimizing faunal habitat destruction.</p> <p>-The big (marula) trees found within the project site should be left alone to continue providing shade for the site.</p>	<p>No disturbance to unmarked areas.</p> <p>No complaints of wildlife hunting by the project personnel.</p> <p>No intentional disturbance and destruction of site vegetation and faunal species</p> <p>Visible preservation of onsite vegetation</p>	ECO	<p>Barricading tape (to indicate working areas)</p> <p>Complaint logbook</p> <p>Anti-poaching Police Unit</p>	Throughout the project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
Road use and safety	Increase in vehicular traffic flow	<ul style="list-style-type: none"> <li>-Drivers of the project vehicles should be in possession of valid and appropriate driving licenses.</li> <li>-Vehicle drivers should only use the site access roads provided.</li> <li>-Vehicle drivers should not be allowed to operate vehicles while under the influence of alcohol.</li> <li>-Sufficient parking bays for all project vehicles should be constructed on site.</li> <li>-The Proponent should make provision for safe offloading and loading zones on site.</li> <li>-The maximum speed of vehicles on site should not exceed 40km/hour.</li> <li>-Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents because of mechanical faults of vehicles.</li> </ul>	<p>No complaints from members of the public regarding vehicular traffic issues related to the project activities.</p> <p>All personnel operating the project vehicles and machinery are appropriately licensed and possession of valid driving licenses.</p> <p>Demarcated areas for parking, offloading, and loading zones are on sites.</p> <p>No creation of unnecessary tracks on site.</p>	<p>Proponent</p> <p>ECO</p>	<p>Number and type of project vehicles on site</p> <p>Names of drivers</p>	Throughout project phases
Occupational Health and safety	General health and safety associated with	-During construction phase, a temporary enclosed fence should be constructed around the site. This is done to control access to the site, in	Comprehensive health and safety plan for all activities compiled.	<p>Proponent</p> <p>Project Manager</p>	<p>Temporary fence</p> <p>Occupational Health and Safety Personnel</p>	Throughout project phases



Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
	project activities in both phases	<p>such a way that the public, especially children (that may be living at staff houses) do not access the site and play with equipment and machinery on days when work is not undertaken</p> <p>-As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs.</p> <p>-When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc.</p> <p>-Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</p> <p>-An emergency preparedness plan should be compiled, and all personnel appropriately trained.</p>		ECO	<p>Health and Safety Trainings</p> <p>First aid kits</p> <p>Trained worker to administer first aid</p>	

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-Workers should not be allowed to drink alcohol prior to and during working hours nor allowed on site when under the influence of alcohol as this may lead to mishandling of equipment which results into injuries and other health and safety risks.</p> <p>-The site areas that are considered temporary risks should be equipped with "danger" or "cautionary" signs.</p>				
	Potential increase of prevalence of HIV and AIDS, as well as other sexually transmitted diseases (STDs) prevalence	<p>-The workers should be engaged in health talks and training about the dangers of engaging in unprotected sexual relations which results in contracting HIV/AIDS and other sexual related infections.</p> <p>-Provision of condoms and sex education through distribution of pamphlets and health trainings. These pamphlets can be obtained from local health facilities.</p>	No new infections recorded linked to project workers	Proponent ECO	Occupational health and safety personnel  Sex and Health Education/Awareness  Provision of condoms at the contractors' camp	Throughout project phases
	Accidental fire outbreak	-Portable fire extinguishers should be provided on site.	No wildfires recorded (due to presence of workers)	Proponent ECO	Fire extinguishers (1 per vehicle) and 1 per working site	Throughout project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-No open fires to be created by project personnel onsite.</p> <p>-Potential flammable areas and structures such as fuel storage tanks should be marked as such with clearly visible signage.</p>				
Archaeology and heritage	Accidental disturbance and destruction of archaeological or heritage objects and sites	<p>-On-site personnel (s) and contractor crews must be sensitized to exercise and recognize “chance finds heritage” in the course of their work.</p> <p>-During the construction works, it is important to take note and recognize any significant material being unearthed and making the correct judgment on which actions should be taken (refer to CFP Appendix 1 attached to the EMP).</p> <p>-The Proponent and Contractors should adhere to the provisions of Section 55 of the National Heritage Act in event significant heritage and culture features are discovered while conducting construction works.</p> <p>-An archaeologist or Heritage specialist should be onsite to monitor all significant earth moving activities</p>	<p>Preservation of all artefacts and objects that are discovered on and around project site</p> <p>Printed copy of the Chnace Finds Procedure</p>	<p>Proponent</p> <p>ECO</p> <p>Archaeologist</p>	<p>Salvage equipment</p> <p>Technical Staff (Archaeologist)</p> <p>Flag tapes</p> <p>GPS (site marking)</p> <p>Chance Finds Procedure (Operator, Foreman, Superintended)</p>	As and when required, i.e., prior to site set up, and throughout the project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>that may be implemented as part of the proposed project activities.</p> <p>-When the removal of topsoil and subsoil on the site for construction purposes, the site should be monitored for subsurface archaeological materials by a qualified Archaeologist.</p>				
Littering and waste management (general and solid waste)	Environmental Pollution	<p>-Workers should be sensitized to dispose of waste in a responsible manner and not to litter.</p> <p>-All domestic and general construction waste produced daily should be contained until such that time it will be transported to designated waste sites on a bi-weekly basis during construction and on a weekly basis during operations.</p> <p>-No waste may be buried or burned on site or anywhere else throughout the project lifecycle.</p> <p>-The sites should be equipped with separate waste bins for hazardous and general waste/domestic.</p>	<p>No visible litter around the project area</p> <p>Provision of sufficient waste storage containers</p> <p>Waste management awareness</p>	ECO	<p>Waste storage containers</p> <p>Waste disposal permits to municipalities</p> <p>Environmental, Health and Safety Statements and Policy</p>	Throughout project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-Scrap metals and wood should be packaged at one area and disposed of by an appointed off taker for recycling.</p> <p>-A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented.</p>				
Air Quality	Dust generation	<p>-It is advised that in extremely windy days, a reasonable amount of water should be used to suppress the dust that may be emanating from certain construction areas on the site, access roads and on the gravel in proximity to the site.</p> <p>-Project vehicles should not be left idling when not in use.</p> <p>-During windy months and days, solid effluent stockpiles should be covered with plastic covers or any viable cover to prevent dry effluent particles from blown away by wind and generating dust.</p> <p>-During operations, the air ventilation points on the building are to be placed as high as possible so</p>	<p>No complaints from the public about vehicle emissions and dust generation.</p> <p>Visible efforts to curb potential dust</p>	ECO	<p>Complaint's logbook</p> <p>Dust suppressant (Water)</p>	Throughout project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>that exhaust air and gases enter the air column as high as possible.</p> <p>-The separation distance of the piggery from nearby dwelling houses is done in such a way that the exhaust air and gases is well dispersed and diluted in the air mass.</p>				
Noise	Nuisance	<p>-Noise from vehicles and equipment on site should be reduced to acceptable levels.</p> <p>-The site construction and operational activities' times should be set such that, no activity is carried out during the night or very early in the mornings.</p> <p>-Construction and operational hours should be restricted to between 08h00 and 17h00 to avoid noise generated by equipment and the movement of vehicles.</p> <p>-Pig noise: No specific mitigation measure, however, the Piggery location on the site (based on the site drawings) is far enough from people, i.e., ESCF staff housing,</p>	The project facility especially the Piggery is far from the nearest house/residence.	<p>Proponent</p> <p>ECO</p> <p>Construction Contractor</p>	<p>Complaint's logbook</p> <p>Noise protective equipment for workers</p>	Throughout project phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		administration buildings, and offenders' accommodation).  -When operating noise equipment or working in noisy environments on site, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce noise exposure.				

### **3.3. Rehabilitation of Disturbed Site Areas and Activity Decommissioning**

The rehabilitation referred to herein is associated with the construction phase, whereby the Proponent through their construction contractors will ensure that they do their best to rehabilitate the disturbed areas of the and around the site. These measures include the following:

- Utilize stockpiled subsoil and topsoil to back fill the excavated pits/trenches created for construction purposes.
- Levelling of topsoil that was stockpiled for construction purposes.
- Removal of project vehicles and equipment from the site and taken to designated parking facility off site.
- All project support structures such as temporary ablution facility (toilets and washroom), and storage containers/tanks shall be demolished, and the waste taken to designated sites. The site areas on which these structures were set up will be rehabilitated to pre-activities' state.
- All accumulated waste (hazardous, solid, and general) up until the cessation of construction activities should be removed from site and transported to designated off site waste management facilities.

### **3.4. Environmental Monitoring**

To maintain a low significance rating for the potential impacts through implementation of management action plans, it is worthwhile to strengthen this practice by conducting regular monitoring of certain environmental components. In other words, monitoring is the primary way of establishing how well the environmental management system is operating. The extent of monitoring will depend on the size, scale and nature of the Piggery and Abattoir, the proximity of any developed or urban, and the nature of the local environment.

Implementation and monitoring will need to be done by either the Proponent themselves or through an appointed Environmental Consultant or Environmental Control Officer (ECO)) and report to the applicable Competent Authority (MEFT) and MAWLR (where required). Monitoring will not only be done to maintain the low significant rating but also to ensure that all potential negative impacts identified in this study and new impacts that may arise during project implementation are



properly identified on time and addressed (mitigation measures provided for immediate implementation).

#### **4. CONCLUSIONS AND RECOMMENDATIONS**

The proposed Piggery and Abattoir and their associated infrastructures will primarily positively contribute towards the improved food security for the NCS, which may not only be for the Evaristus Shikongo Correctional Facility but also other NCS facilities in Namibia. However, the proposed project activities are potentially associated with some adverse (negative) impacts that were identified, described, and assessed during the environmental assessment process and contained in this Report. The significance rating of the impacts was found to be medium. Where it is anticipated that the potential impact cannot be practically avoided altogether, appropriate management and mitigation measures (action plans) recommended herein should be effectively monitored.

The effective implementation and monitoring of the mitigation measures would ensure environmental sustainability at the site and its surrounding area. Therefore, the proposed facilities at ESCF may be granted an Environmental Clearance Certificate on condition that the Proponent:

- Implements all mitigations provided in this Report and the management action plans in the Draft EMP as recommended.
- Obtain all the required permits, licenses and approvals for the specific project activities as required (please refer to the Permitting and Licensing requirements in Table 3).
- Together with their workers, and contracted engineers, and construction contractors comply with the legal requirements governing this type of project and its associated activities applicable to their work; and
- Adhere to all the necessary environmental and social (occupational health and safety) precautions provided.

## APPENDIX 1: CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020)

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found during development work. The procedure set out here covers the reporting and management of such finds.

**Scope:** The “*chance finds*” procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

**Compliance:** The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “*a person who discovers any archaeological .... object .....must as soon as practicable report the discovery to the Council*”. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Manager/Supervisor must report the finding to the following competent authorities:

- National Heritage Council of Namibia (061 244 375)
- National Museum (061 276 800),
- National Forensic Laboratory (061 240 461).

Archaeological material must NOT be touched. Tempering with the materials is an offence under the heritage act and punishable upon conviction by the law.

### Responsibility:

**Operator:** To exercise due caution if archaeological remains are found

**Foreman:** To secure site and advise management timeously

**Superintendent:** To determine safe working boundary and request inspection

**Archaeologist:** To inspect, identify, advise management, and recover remains

### Procedure:

Action by person identifying archaeological or heritage material:

- a) If operating machinery or equipment stop work
- b) Identify the site with flag tape
- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

- a) Report findings, site location and actions taken to superintendent
- b) Cease any works in immediate vicinity

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary
- c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by Archaeologist

- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area
- c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police
- d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.